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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
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BOSTON, MASSACHUSETTS 02114-2023

June 15, 2004

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EA ENGINEERING,
SCIENCE & TECHNOLOGY

JUN 16 2004

RECEIVED

**Re: *Conceptual Model of the Eastern Plume, Revised as of December 2003,
Naval Air Station, Brunswick, Maine***

Dear Mr. Krivansky:

Pursuant to § 6 of the Naval Air Station Brunswick, Maine Federal Facility Agreement dated October 19, 1990, as amended (FFA), the Environmental Protection Agency has reviewed the subject document and comments are below:

General Comments:

1. The Conceptual Model, as presented, is consistent with the findings of various investigations, including the hydrostratigraphic characterization, interpretation of the overall hydraulics, distribution of chlorinated solvents, and effects of extraction.
2. The stated intent of the Conceptual Model is to maintain a "living document" that summarizes interpretations of the Eastern Plume in light of ongoing investigations, as well as natural and induced evolution of the plume. The approach adopted is to limit the Conceptual Model to "areas of consensus" (p. 1, para. 1), and "the commonly agreed upon interpretation ..." (p. 1, Introduction, para. 2). While the motivation to document agreed-upon aspects of the conceptual model is clear, this approach is somewhat restrictive. It may be useful to expand the Conceptual Model to include areas that may be under consideration, subjects that are being actively debated, or even topics that are controversial. If such items are identified, they could be relegated to a separate attachment, so that the distinction between areas of consensus and areas of ongoing investigation or discussion is clear.
3. The next iteration on the Conceptual Model should include a section on natural attenuation, supported by results from the ongoing investigation. The section should provide a summary of the abundance and spatial distribution of daughter products (e.g., cis-1,2-DCE, VC, 1,1-DCA, etc.), the spatial distribution of various redox indicators (e.g., ORP, DO, ferrous iron, etc.), the availability of electron donors, and an overall assessment of the potential for natural attenuation to contribute significantly to the reduction of contaminant mass or to containment of the plume.

Specific Comments:

4. **p. 2, Overburden Geology:** This section contains a good description of the lithology and the hydraulic properties of the principal overburden units. A range of hydraulic conductivity values is given for

the transition unit (including sandy subunits, which, in turn, presumably includes the lower sand), and the Presumpscot Clay. However, the conductivity of the upper sand unit is not specified. Please include a range of measured K values for the upper sand, if available, for balance and consistency.

5. **p. 3, Overburden Geology:** The second complete bullet on this page states, "The clay thickness has been measured up to 80 ft, ...," while the third bullet indicates that, "... much greater thickness (up to 110+ ft) [was] noted ...". These two statements appear to be inconsistent. It is recognized the first statement is based on boring logs, while the second is based on the recent geophysics study. If it is intended to make this distinction, then the text should be expanded for clarity. If the first statement is intended to be more generic, then it should be revised to be consistent with the second. If it is desired to retain the distinction, it is suggested that the first reference state something to the effect that, "The clay thickness has been measured *in boring logs* up to 80 ft, ...," while the second reference might be expanded to something like, "... Weapons Area Road. Note that the maximum clay thickness inferred from the seismic refraction survey is greater than has been encountered in any borings to date."

6. **p. 3, Bedrock Geology:** The last sentence on this page ("Existing bedrock data for the site are based on six boring locations.") might be expanded to read "... and inferences based on geophysical methods" in order to anticipate the subsequent paragraphs, which include a discussion of geophysics results.

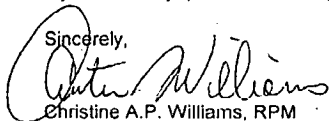
7. **p. 5, Contaminant Transport and Distribution:** This section nowhere details the principal contaminants explicitly. A bullet should be added that states that the principal COCs are TCE and 1,1,1-TCA (with lesser quantities of various other compounds, including daughter products). Historical and the most recent maximum concentrations should be stated, as well.

8. **p. 6, Contaminant Transport and Distribution:** The last paragraph of this section acknowledges (appropriately) that there is some evidence for continued evolution of the leading edge of the plume to the south and southeast. It might also be appropriate to note here that there appears to be a "trailing edge" on the plume, as evidenced by monotonic declines in concentration at a number of upgradient wells, including MW-NASB-212, MW-306, MW-319, and MW-225A. The evidence for clean water moving into the historical plume footprint from upgradient supports the conclusion that historical sources in these area are now absent or under control.

9. **p. 6, Contaminant Transport and Distribution:** As noted in the General Comment above, the section on Contaminant Transport and Distribution should be expanded in a future iteration on the Conceptual Model to include a summary of results from the natural attenuation assessment.

If you have any questions with regard to this letter, please contact me at (617) 918-1384.

Sincerely,



Christine A.P. Williams, RPM
Federal Facilities Superfund Section

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